

WHAT IS CLAIMED IS:

1. A self-cleaning rake, comprising:
 - an elongated handle having a rake end, a handle end and a middle portion;
 - a body having a surface substantially lying in one plane and having an attachment end that is attached to the rake end of the handle, a tine end opposite the attachment end and a central portion disposed between the attachment end and the tine end;
 - a plurality of tines extending from and fixed to the tine end of the body;
 - an actuator bar channel formed in the central portion of the body comprising a pair of major sides and a pair of minor sides;
 - an actuator bar disposed within the actuator bar channel and extending generally parallel to the tine end of the body;
 - a grip disposed about the outside of the middle portion of the handle and adapted to slide along the handle;
 - a push-rod having first and second ends, the push-rod disposed along the handle and connected to the grip and to the actuator bar;
 - a cleaning bar disposed along the tine end of the body and having a plurality of channels, each of which is adapted to surround at least a portion of a respective one of the tines;
 - a first extender channel formed in the body and extending from the actuator channel to the tine end of the body; and
 - a first extender connected to the actuator bar and to the cleaning bar;wherein the actuator bar, the push-rod and the first extender are enclosed within the self-cleaning rake when in a retracted position.
2. The self-cleaning rake of Claim 1, further comprising a second extender channel formed in the body and extending from the actuator channel to the tine end of the body and a second extender connecting the actuator bar to the cleaning bar.
3. The self-cleaning rake of Claim 1, further comprising a spring configured to bias the first extender in a retracted position.

4. The self-cleaning rake of Claim 3, wherein said spring is disposed between said actuator bar and said actuator bar channel such that said spring is stretched when said first extender is in an extended position to bias the first extender in a retracted position.

5. The self-cleaning rake of Claim 3, wherein said spring is disposed between said actuator bar and said actuator bar channel such that said spring is compressed when said first extender is in an extended position to bias the first extender in a retracted position.

6. The self-cleaning rake of Claim 5, wherein said spring is disposed between the bottom of said actuator bar and the actuator bar channel.

7. The self-cleaning rake of Claim 6, wherein said actuator bar comprises a recessed portion configured such that said spring contacts said actuator bar in said recessed portion.

8. The self-cleaning rake of Claim 6, wherein said actuator bar channel comprises a recessed portion configured such that said spring contacts said actuator bar channel in said recessed portion.

9. The self-cleaning rake of Claim 1, wherein the grip, the actuator bar channel and the extenders are adapted to move at least a leading edge of the cleaning bar to a distal end of each of the tines.

10. The self-cleaning rake of Claim 1, wherein the actuator bar channel comprises a pair of major sides and a pair of minor sides, said sides being disposed such that the pair of major sides are generally parallel to the tine end of the body.

11. The self-cleaning rake of Claim 1, wherein the major sides of the actuator bar channel comprise a pair of non-parallel major sides and a pair of generally parallel minor sides.

12. The self-cleaning rake of Claim 1, wherein the cross-sectional area of at least one of the channels in the cleaning bar varies along the length of the channel.

13. The self-cleaning rake of Claim 1, wherein the tines are configured such that the distance between the tines remains generally the same during raking and cleaning.

14. The self-cleaning rake of Claim 1, wherein the body is adapted to gather debris during raking.

15. The self-cleaning rake of Claim 13, wherein the tines are substantially rigid.

16. The self-cleaning rake of Claim 1, further comprising a cover adapted to enclose the actuator bar channel and the extender channel.

17. The self-cleaning rake of Claim 1, further comprising:

a pair of longitudinal slots formed generally opposite one another in the middle portion of the handle; and

a pin disposed within the grip and connected to the push-rod, the pin engaging at least one of the pair of longitudinal slots;

wherein the pin is adapted to move within the slots thereby defining a range of motion of the grip.

18. The self-cleaning rake of Claim 14, wherein a length of the pair of minor sides is generally equal to a length of the pair of slots.

19. The self-cleaning rake of Claim 1, wherein at least one channel of the cleaning bar is configured such that the bottom of the channel that extends to or beyond the distal end on its respective tine is narrower than the top end of the channel.

20. The self-cleaning rake of Claim 1, wherein the actuator bar, extender and the cleaning bar are fabricated as one piece.

21. The self-cleaning rake of Claim 1, wherein the push-rod, actuator bar, extender and the cleaning bar are fabricated as one piece.

22. A self-cleaning rake body for use with a rake handle and actuating push-rod, comprising:

a body having an attachment-end configured for attachment to the handle, the body defining an elongated tine-end opposite the attachment end and a central actuation portion disposed between the attachment-end and the tine-end;

a plurality of tines extending from the tine-end of the body;

an elongated actuator bar enclosed within the actuation portion and extending generally parallel to the tine-end of the body, said actuator bar being adapted to engage the push-rod; and

an elongated cleaning bar that is operably attached to the actuator bar and is disposed along the tine-end of the body, said cleaning bar having a plurality of cleaning channels, each of which is adapted to at least partially surround a portion of a respective one of the tines;

wherein the cleaning channels extend a distance of at least one quarter of an inch along the tines and have a cross-sectional area that is larger than a cross-sectional area of the tines, and wherein the cleaning bar is adapted to extend to a distal end of the tines.

23. The rake body of Claim 22, wherein the actuator bar is operably attached to the cleaning bar by flexible extenders.

24. The rake body of Claim 23, wherein the extenders comprise cables.

25. The rake body of Claim 23, wherein the extenders comprise elongated bands.

26. The rake body of Claim 25, wherein the extenders further comprise a composite material.

27. A self-cleaning rake, comprising:

an elongated handle having a longitudinal axis;

a body;

a plurality of tines extending from the body;

a push-rod connected to the handle and extending to the body;

a push-rod actuator connected to said push-rod and adapted to extend and retrieve the push-rod along the longitudinal axis of the handle;

an actuator bar slidingly attached to the body and connected to the push-rod such that the push-rod can transmit force from the push-rod actuator to the actuator bar;

a first extender having a first end attached to the actuator bar and a second end; and

a cleaning bar connected to the second end of the first extender, the cleaning bar having a plurality of cleaning channels, one for each tine, wherein at least a portion of each of the cleaning channels has a shape and a size that corresponds to a shape and a size of a portion of a respective one of the tines.

28. The rake of Claim 27, further comprising a second extender having a first end attached to the actuator bar and a second end connected to the cleaning bar.

29. The rake of Claim 28, wherein the channels extend a distance of at least 1/4 of an inch along the tines, and wherein the size of at least one of the tines varies along its length.

30. The rake of Claim 28, further comprising two extender channels adapted to redirect the extenders from a direction parallel to the handle to a substantially different direction parallel to the tines.

31. The rake of Claim 30, wherein the extender channels are formed by tubes that are affixed to the body.

32. The rake of Claim 30, wherein the body is a generally planar object and the at least two extender channels are formed in the body.

33. The rake of Claim 30, wherein the cleaning channels extend a length of at least one inch.

34. The rake of Claim 30, wherein the cleaning channels extend a length of at least 1-1/2 inches.

35. The rake of Claim 30, wherein substantially all of the body is formed by injection molding.

36. The rake of Claim 33, wherein the actuator bar, the push-rod and the push-rod actuator are spring biased to an at-rest position.

37. A method of manufacturing a rake, comprising:

forming a rake body with an attachment end, a tine-end that is wider than the attachment end and a central portion;

attaching a tubular handle to the attachment end of the body;

housing a plurality of tines within the tine-end of the body wherein the tines extend from the body in a direction that is not parallel with the handle;

forming a plurality of channels in the central portion of the body;

forming an actuator bar in one of the channels, said actuator bar being adapted to slide up and down the body;

substantially surrounding the tines with a cleaning bar located along the tine-end of the body and having a plurality of channels, at least one channel for each tine, the cleaning bar being adapted to move along the length of the tines; and

connecting at least one extender to the actuator bar and to the cleaning bar, said at least one extender having first and second ends, and said at least one extender being adapted to connect at the first end to the actuator bar and to connect at the second end to the cleaning bar.

38. The method of Claim 37, further comprising enclosing the plurality of channels of the body with a cover adapted to engage the body and at least partially encapsulate the extenders and the actuator bar.

39. A system for manufacturing a rake, comprising;

- means for forming a rake body with an attachment end, a tine-end that is wider than the attachment end and a central portion;
- means for attaching an elongated tubular handle to the attachment end of the body;
- means for housing a plurality of tines within the tine-end of the body wherein the tines extend from the body in a direction that is not parallel with the handle;
- means for forming a plurality of channels in the central portion of the body;
- means for forming an actuator bar in one of the channels that is adapted to slide up and down the body;
- means for substantially surrounding the tines with a cleaning bar located along the tine-end of the body and having a plurality of channels, at least one channel for each tine, the cleaning bar being adapted to move along the length of the tines; and
- means for connecting at least one extender to the actuator bar and to the cleaning bar, each of the at least one extender having first and second ends, and each of the at least one extender being adapted to connect at the first end to the actuator bar and to connect at the second end to the cleaning bar.

40. The system of Claim 39, further comprising means for enclosing the plurality of channels of the body with a cover adapted to engage the body and at least partially encapsulate the extenders and the actuator bar.

41. A method of cleaning debris from the tines of a rake having a handle connected to a housing with a plurality of tines at one end thereof, comprising:

- moving a push-rod along the handle;
- moving a cleaning mechanism in response to movement of the push-rod; and
- moving a cleaning bar in response to movement of the cleaning mechanism, wherein the cleaning bar includes at least one cleaning channel that substantially surrounds at least one respective tine such that the act of moving the cleaning bar moves the cleaning bar along the at least one tine so as to remove debris located in contact with the at least one tine, and

wherein a portion of the at least one cleaning channel extends beyond the end of the at least one tine during a portion of the movement of the cleaning bar along the at least one tine.

42. A self-cleaning rake having a handle connected to a housing with a plurality of tines at one end thereof, comprising:

means for moving a push-rod along the handle;

means for moving a cleaning mechanism in response to movement of the push-rod;
and

means for moving a cleaning bar in response to movement of the cleaning mechanism, wherein the cleaning bar includes at least one cleaning channel that substantially surrounds at least one respective tine such that the act of moving the cleaning bar moves the cleaning bar along the at least one tine so as to remove debris located in contact with the at least one tine, and wherein a portion of the at least one cleaning channel extends beyond the end of the at least one tine during a portion of the movement of the cleaning bar along the at least one tine.

43. A self-cleaning rake, comprising:

a handle;

a body attached to the handle, the body comprising a cleaning mechanism;

a plurality of tines attached to the body; and

a cleaning member connected to the cleaning mechanism, said cleaning member associated with at least one of the plurality of tines, wherein said cleaning member surrounds said associated tine and travels along at least a portion of said associated tine to a location at least adjacent to the distal end of said associated tine so as to remove material located on said associated tine.

44. The self-cleaning rake of Claim 43, wherein the cleaning member travels along at least a portion of said associated tine to a location beyond the distal the end of said associated tine